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动物分类学报

A NEW RECORD SPECIES OF THE GENUS MEGADELPHAX WAGNER AND REDESCRIPTION OF EURYBREGMA NIGROLINEATA SCOTT (HEMIPTERA, FULGOROIDEA, DELPHACIDAE) FROM CHINA

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Abstract The type species of the delphacid genus *Eurybregma*, *E. nigrolineata* Scott is redescribed and illustrated based on the specimens from Ningxia (N. W. China) which has not been reported by the native researchers. *Megadelphax cornigera* (Kusnezov, 1929) is reported for the first time from China, a key to the Chinese *Megadelphax* species is provided. The specimens studied are deposited in the Entomological Museum, Northwest A & F University, Yangling, Shaanxi, China (NWAFU).

Key words Hemiptera, Delphacidae, *Megadelphax*, *Eurybregma*, new record, China.

Genus Eurybregma **Scott, 1875**
Eurybregma Scott, 1875: 92.

Type species: *Eurybregma nigrolineata* Scott, 1875. by original designation.

Remarks. The delphacid genus *Eurybregma* was established by Scott (1875) based on *E. nigrolineata* Scott from England. It belongs to the tribe Delphacini of the subfamily Delphacinae and distribute throughout the Holarctic Region, twelve species have been reported worldwide to date. The type species was known distribute in Xinjiang, China (Anufriev & Emelyanov, 1988), but it has not been reported by the Chinese native researchers and was not included by Ding (2006) in his Delphacidae volume of the Fauna Sinica. During our recent work on the taxonomy of Delphacidae, we found specimens of *E. nigrolineata* from Liupanshan Nature Reserve in Ningxia (N. W. China) and redescribed here.

Distribution. China (Ningxia), England, France, Germany, Austria, Russia, Hungary, Turkstan, Azerbaijan, Mongolia, Turkey, Bulgaria, Belgium, Switzerland, Europe, American.

Eurybregma nigrolineata **Scott, 1875** (Figs. 1-14)
Eurybregma nigrolineata Scott, 1875. *Ent. Monthly Mag.*, 12: 92.

Redescription. Body length: male, macropter 2.80-2.87 mm, including tegmen 4.68-4.95 mm, brachypter 3.13-3.30 mm; female: macropter 3.50-3.78 mm, including tegmen 4.95-4.98 mm, brachypter 3.73-3.78 mm.

Color. Macropterous. Male body with two distinct longitudinal black stripes from basal compartments of vertex to end of mesonotal margins. Vertex sordid in apical half, sublaterally with two more or less distinct blackish brown stripes to end of frons. Frons sordid brown; ante- and postclypeus black except the midline yellowish. Eyes dark. Ocelli black to reddish black. Genae yellowish. Antennae yellowish brown. Pronotum and mesonotum yellow, in some specimens the area outer of black stripe of mesonotum brown, tegula, posterolateral angles of pronotum and mesonotum black. Dorsum of male abdomen with 4 black stripes bordered with yellow stripes, venter of abdomen black except the lateral margins yellow. Tegmina with three longitudinal blackish brown stripes, wings subhyaline with veins brown. Pygofer and parameres black. Legs brownish to blackish brown, 1st to 3rd femur with longitudinal stripes, blackish brown. Female with the same color as male except the venter of abdomen yellow. Brachypterous male body color as macropterous, female body light, in some female specimens the whole body tawny brown to sordid brown, without distinct balck stripes and markings.

Head. Short and wide, in lateral aspect apparently rounded. Head including eyes about as wide as pronotum. Vertex broader at base than medially long about 1.95: 1.00; two lateral carinae shallowly concave and slightly diverging to frons; sumedian carinae originating from near base of lateral carinae and vanishing anteriorly; Y-shaped carina with arms and stalk distinct, area of compartments concave. Frons ca. 1.12 times higher than its maximum width, widest at level of eyes, lateral frontal margins strongly convex, median carina weakly developed and only more conspicious at apical 2/3. Antennal segments cylindrical, slightly surpassing frontoclypeal suture, segment I shorter than segment II about 0.55: 1.00. Postclypeus wider at base than frons at apex, post- and anteclypeus together approximately 0.84x length of frons, median carina well defined.

Thorax. Pronotum in midline slightly shorter than length of vertex about 0.86: 1.00, lateral carinae slightly curved, diverging towards but not attaining posterior margin, pronotum width 1.07-1.10, length 0.23-0.25. Mesonotum gently vaulted, in midline ca. 1.50 times longer than vertex and pronotum together, lateral carinae of mesonoturn nearly on not attaing posterior margins, median carina apically obscure, in brachypterous form the lateral carinae straight. Tegmina in macropterous form 3.93-4.33 mm long, surpassing tip of abdomen nearly one third of their total length, in brachypterous male 1.40-1.68 mm long, attaining the sixth abdominal tergite, in brachypterous female attaining the end of third to fourth abdominal tergite. Legs with metatibia 0.90-1.10 mm long, with 5 apical teeth grouped 2+3, metabasitarsus (0.50-0.53) nearly as long as tarsomere 2 (0.19-0.20) + 3 (0.28-0.35) combined, metabasitarsus distally with 7 apical teeth, and tarsomere II with 4 teeth. Calcar slightly shorter than metabasitarsus, solid, thick, without distinct teeth along interior margin.

Male genitalia. Male pygofer trapezoid in lateral view, ventrally wider than dorsally, laterocaudal margins slightly sinuate,

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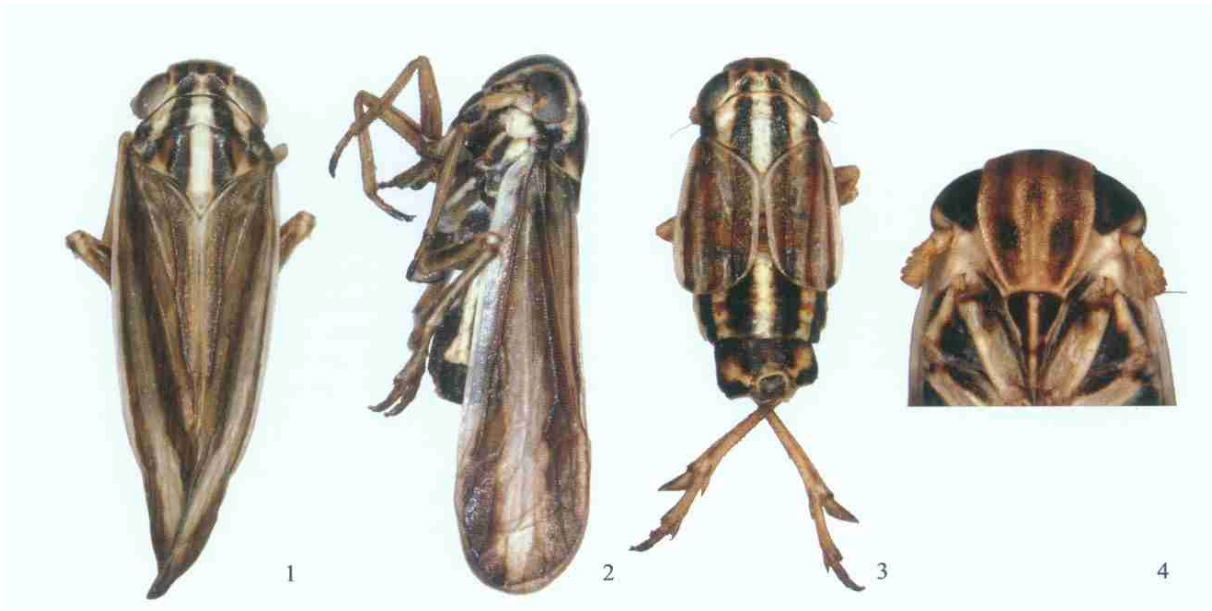
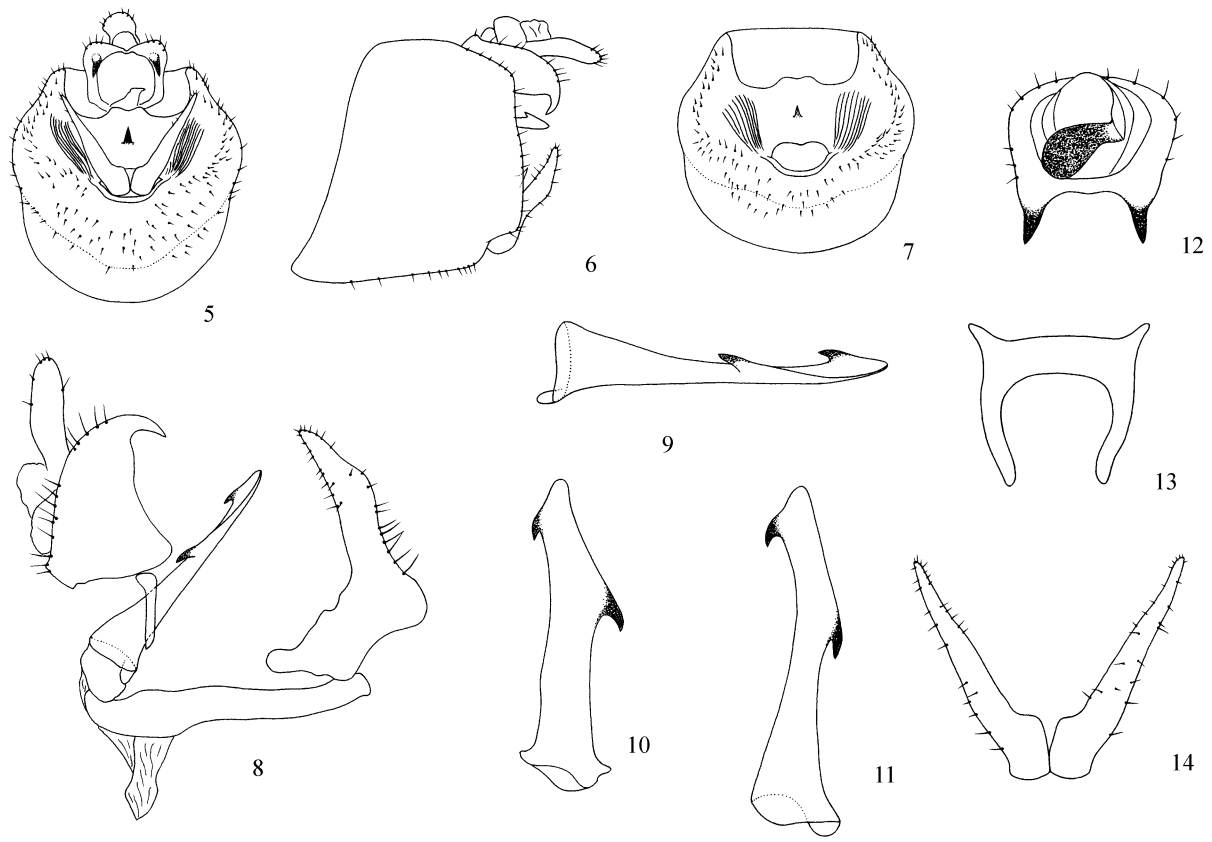




Figs 1-14. *Eurybregma nigrolineata* Scott. 1. Male habitus (macropterous), dorsal view. 2. Same, lateral view. 3. Male habitus (brachypterous). 4. Frons. 5. Male genitalia, caudal view. 6. Same, left lateral view. 7. Pygofer, caudal view, anal segment, aedeagus and parameres removed. 8. Anal segment, aedeagal complex and parameres, left lateral view. 9. Aedeagus, left lateral view. 10. Same, dorsal view. 11. Same, dorsolateral view from right side. 12. Anal segment, caudodorsal view. 13. Suspensorium, caudal view. 14. Parameres, caudal view.

laterodorsal angles obtusely rounded, not produced caudad, in caudal aspect pygofer opening wider than long. Diaphragm broad, dorsal margin produced and concave medially, centrally between dorsal margin and opening for parameres arising a spinose process directed dorsocaudad, in lateral view slightly surpassing posterior margin of male pygofer. Suspensorium π-shaped, deeply incised ventrally, dorsally with a very short process at each side leading to the anal segment ventrolaterally. Parameres simple, fairly long,

divergent, gradually narrowing to apex. Aedeagus straight in lateral view, tubular in basal half and flat dorsoventrally in apical half, subapically armed with a teeth at left side and another relatively big one at middle at right side. Opening for parameres small, dorsal margin incised medially, ventrally margin even concave. Male anal segment ring-like, laterodistal angles on each side produced into a short, stout spinose process which is slightly curved distally.

Specimens examined. 4 ♂♂, 6♀♀ (macropterous), 2 ♂♂, 7♀♀ (brachypterous), Dongshanpo, 2 070 m, 1 July 2008; 3 ♂♂, 3♀♀ (macropterous), Hongxia, 2 150 m, 8 July 2008; 2 ♂♂, 3♀♀ (macropterous), 2 ♂♂, 6♀♀ (brachypterous), Woyangchuan, 1 930 m, 28 June 2008; 3 ♂♂, 4♀♀ (macropterous), Xixia, 2 150 m, 10 July 2008; 1 ♂, 2♀♀ (macropterous), 2 ♂♂, 1♀ (brachypterous), Qiuqianjia, 1 820 m, 26 June 2008; 1 ♂, 8♀♀ (macropterous), 1 ♂, 1♀ (brachypterous), Sutai forestry centre, 2 150 m, 10 July 2008; 2 ♂♂ 1♀ (brachypterous), Fengtai forestry centre, 2 350 m, 5 July 2008; 1 ♂, 3♀♀ (brachypterous), Guamagou, 2 050 m, 23 June 2008. All specimens above were collected by MEN Qiu-Lei from Liupanshan, Ningxia Province, China.

Distribution. China (Ningxia, Xinjiang), Mongolia, Turkey, Bulgaria, Belgium, Switzerland, Europe, American.

Genus Megadelphax **Wagner, 1963**

Megadelphax Wagner, 1963: 167.

Type species: *Delphax sordidula* Stål, 1853. by original designation.

Distribution. China (Inner Mongolia, Gansu, Ningxia), Mongolia, Caucasus, Sweden, Germany, Finland, Switzerland, France, Scandinavia, Austria, Czechoslovakia, Belgium, Netherland, Russia, Algeria, Italy, Romania, Siberia, Tunisia, Batavia, Turkestan, Kazakhstan, Europe, Africa.

Key to species of Megadelphax **in China** (**male**)

1. Processes of male anal segment long, parallell and directed caudoventrad ……. M. cornigera **(Kusnezov, 1929)**
Processes of male anal segment short, directed transversely to each other ……. M. kangauzi **Anufriev, 1970**

Megadelphax cornigera **(Kusnezov, 1929) New record to China** (Figs. 15-28)

Liburnia cornigera Kusnezov, 1929: 161.
Liburnia angara Kusnezov, 1929: 164.
Megadelphax cornigera Emeljanov, 1977: 109.

Body length. Male. Macropter 2.88-2.90 mm, including tegmen 4.13-4.18 mm, brachypter 2.78-2.80 mm; female: macropter 3.08-3.25 mm, including tegmen 4.18-4.22 mm, brachypter 3.01-3.05 mm.

Color. Macropterous. Male vertex sordid yellow in basal half, basal compartment with a blackish brown spot at each side, vertex in apical half, frons and genae blacksih brown, frons with longitudinal black stripes adjacent lateral carinae and at the both sides of median carina; ante- and postclypeus black except the midline yellowish. Antennae black to blackish brown. Eyes dark. Ocelli reddish black. Pronotum sordid brown, in some specimens the area inner lateral carina with a triangular brown patch at each side, outer lateral carinae of pronotum and mesonotum blackish brown, at each side of posterolateral angle of pronotum with sordid spot and patch. Tegulae greyish. Abdomen black, dorsum and venter of male abdomen adorned with sordid orange patches laterally at each tergite. Tegmina subhyaline, alnog posterior margins infuscated, apical veins brown; wings subhyaline with veins brown. Pygofer and parameres black. Legs black to blackish brown, 1st to 3rd tarsi sordid to blackish brown. Female with the same color as male except ovipositor brown. Brachypterous. male body color as macropterous, female body light, tegmina yellowish brown.

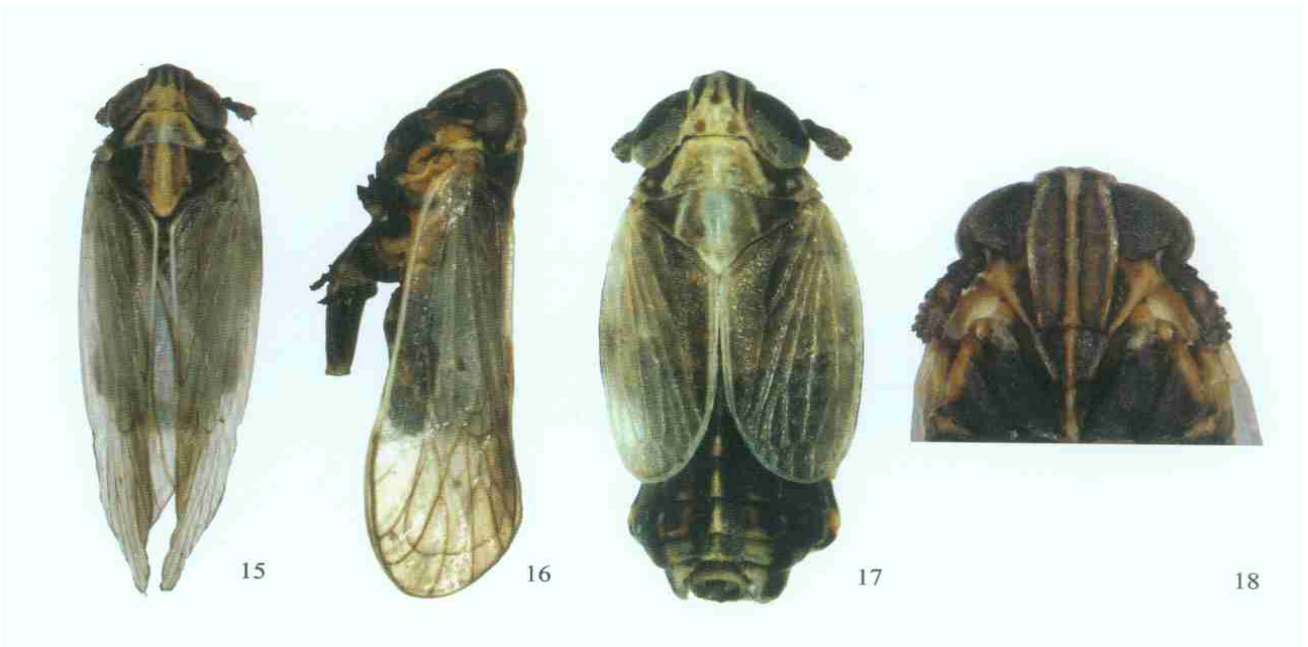
Head. Including eyes narrower than pronotum about 0.91-1.00, in lateral view meeting lateral carinae of frons with right angle at fastigium. Vertex quadrate, longer in midline than broad at base about 1.15-1.00; anteriorly transverse, slightly produced medially, two lateral carinae subparallel except where expanded laterally behind eyes; sumedian carinae originating from near base of lateral carinae, percurrent and uniting at apex of vertex; Y-shaped carina with arms and stalk distinct, area of basal compartments slightly concave. Frons ca. 2.10 times higher than its maximum width, widest at the level of ocelli, lateral frontal margins slightly convex. Antennal segments cylindrical, surpassing frontoclypeal suture, segment Ⅰ shorter than segment Ⅱ about 0.59-1.00. Postclypeus wider at base than frons at apex, post- and anteclypeus together approximately 0.80× length of frons, median carina well defined.

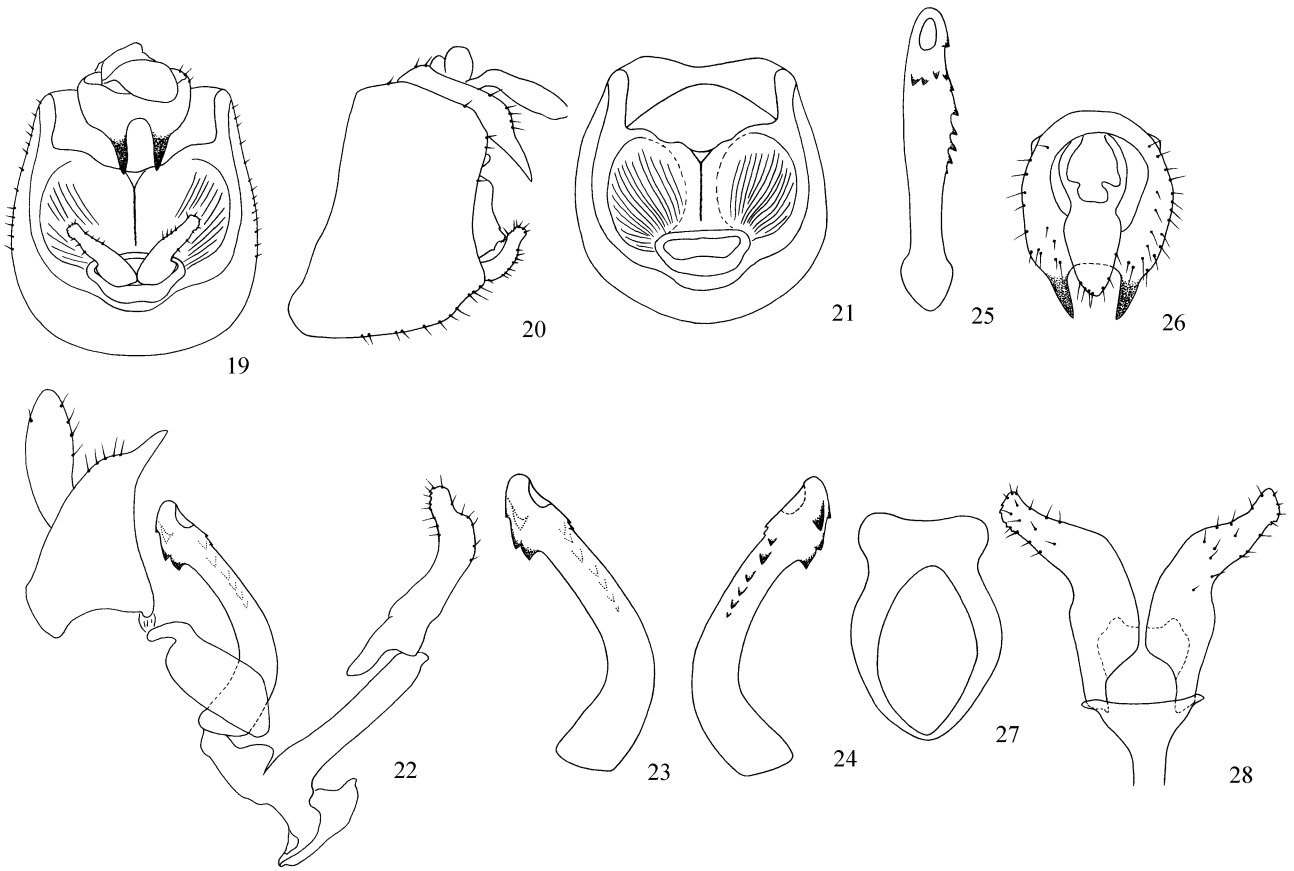
Thorax. Pronotum in midline slightly shorter than length of vertex about 0.83-1.00, lateral carinae slightly curved, diverging towards but not attaining posterior margin, pronotum width 0.85-0.87, length 0.23-0.24. Mesonotum in midline ca. 1.21 times longer than vertex and pronotum together, lateral carinae slightly diverging caudad but not attaining posterior margin, median carina obscure apically. Tegmina in macropterous form 3.35-3.38 mm long, surpassing tip of abdomen less than one third of their total length, in brachypterous 1.38-1.56 mm long, attaining the sixth abdominal tergite. Legs with metatibia 0.85-0.87 mm long, with 5 apical teeth grouped 2+3, metabasitarsus (0.38-0.40) nearly as long as tarsomere 2 (0.14-0.15) + 3 (0.24-0.25) combined, metabasitarsus distally with 7 apical teeth, grouped 2+5, and tarsomere Ⅱ with 4 teeth. Calcar (0.31-0.33) slightly shorter than metabasitarsus, solid, with about 13 teeth along interior margin.

Male genitalia. Male pygofer subquadrangular in lateral view, ventrally wider than dorsally, laterocaudal margins slightly concave, laterodorsal angles obtusely rounded, not produced caudad, in caudal aspect pygofer opening slightly longer than wide. Diaphragm fairly broad, dorsal margin concave medially, diaphragm caudally prolonged that far surpassed posterior margin of pygofer, in lateral view fairly broad, laterocaudal margin having irregular teeth. Suspensorium broad dorsally, ventrally ring-like embracing base of aedeagus and connecting on venral side. Parameres short, diverging, narrowing from subapex, apically truncate and with teeth along outer margins. Aedeagus tubular, in lateral view strongly curved at basal third, subapex with teeth on both margins, at right side with a row of 7 teeth in distal half. Opening for parameres large, at middle of dorsal margin slightly incised upward, ventral margin evenly convex. Male anal segment ring-like, on each side of laterodistal angle arising a stout spinose process.

Specimens examined. 3 ♂♂ (macropterous), 25 ♂♂, 11♀♀ (brachypterous), Dongshanpo, 2 070 m, 1 July 2008; 4 ♂♂, 1♀ (macropterous), Woyangchuan, 1 930 m, 28 June 2008; 1 ♂ (brachypterous), Hongxia, 2 150 m, 8 July 2008; 1 ♂, 1♀ (macropterous), 2 ♂♂ (brachypterous), Fengtai forestry centre, 2 350 m, 5 July 2008; 6 ♂♂ (brachypterous), Guamagou, 2 050 m, 23 June 2008; 1♀ (brachypterous), Longtan forestry centre, 12 July 2008. All specimens above were collected by MEN Qiu-Lei from Liupanshan, Ningxia Province, China.

Distribution. China (Ningxia), Mongolia, Turkestan, USSR.





Figs. 15-28. *Megadelphax cornigera* (Kusnezov, 1929). 15. Male habitus (macropterous), dorsal view. 16. Same, lateral view. 17. Male habitus (brachypterous). 18. Frons. 19. Male genitalia, caudal view. 20. Same, left lateral view. 21. Pygofer, caudal view, anal segment, aedeagus and parameres removed. 22. Anal segment, aedeagal complex and parameres, left lateral view. 23. Aedeagus, left lateral view. 24. Same, right lateral view. 25. Same, caudal view. 26. Anal segment, caudodorsal view. 27. Suspensorium, caudal view. 28. Parameres, caudal view.

REFERENCES

Anufriev, G. A. and Emelyanov, A. F. 1988. 1. Suborder Cicadinea (Auchenorrhyncha) - cicads. *In*: Ler, P. A. (ed.), Keys to the Identification of Insects of the Soviet Far East. Vol. 2, Homoptera and Heteroptera. Nauka, Leningrad. (In Russian) pp. 12-495.

Ding, J. H. 2006. Fauna Sinica. Insecta Vol. 45. Homoptera Delphacidae.

Editorial Committee of Fauna Sinica, Chinese Academy of Science. Science Press, Beijing. 776 pp.

Emeljanov, A. F. 1977. Leafhoppers (Homoptera: Auchennorhyncha) from the Mongolian People's Republic based mainly on materials of the Soviet-Mongolian zoological expeditions (1967-1969). *Nasekomye Mongol.*, 5: 96-195.

Wagner, W. 1963. Dynamische Taxionomie, angewandt auf die Delphaciden Mittleuropas. *Mitt. Hamburg. Zool. Mus.*, 60: 111-180.

黑带艾尤飞虱的重新描记及美伽飞虱属中国一新纪录种记述 (半翅目, 蜡蝉总科)

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摘 要 重新描记了采自宁夏六盘山自然保护区的艾尤飞虱属模式种: 黑带艾尤飞虱 *E. nigrolineata* Scott, 1875, 该种国外学者曾报道在我国新疆有分布, 但目前未见国内学者的研究报道; 同时记述美伽飞虱属 *Megadelphax* 一中国新纪录种: 科尼美伽飞虱 *M. cornigera* (Kusnezov, 1929), 提供了美伽飞虱属中国已知种的检索表。所有研究标本均保存在西北农林科技大学昆虫博物馆。

关键词 半翅目, 飞虱科, 艾尤飞虱属, 美伽飞虱属, 新纪录, 中国.
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